Ride Smart Ride Safe

ATV Rider Course Manual

YAMAHA

Stephen Galls ATV SAFETY INSTITUTE

Foreward

This Handbook was produced by Yamaha Motor Australia in conjunction with the Stephen Gall ATV Safety Institute. This manual is adapted from the ATV Safety Institute in the United States of America for use with the Australian ATV Rider Course.

The Australian ATV Rider Course is a hands-on course, with particular emphasis on the safety implications relating to each lesson. The course also covers protective gear, environmental concerns, local laws, and safety techniques. The hands-on training includes pre-ride inspections, starting and stopping, turning (gradual and quick), hills (stopping, turning around, traversing), emergency stopping and swerving, and riding over obstacles.

ATVs are fun as well as functional. They are used in all types of off-highway applications such as farming, military, police and surf patrols, racing, and recreational activities.

Being responsible, using common sense and practising important skills are all important ingredients in making ATV riding more rewarding.

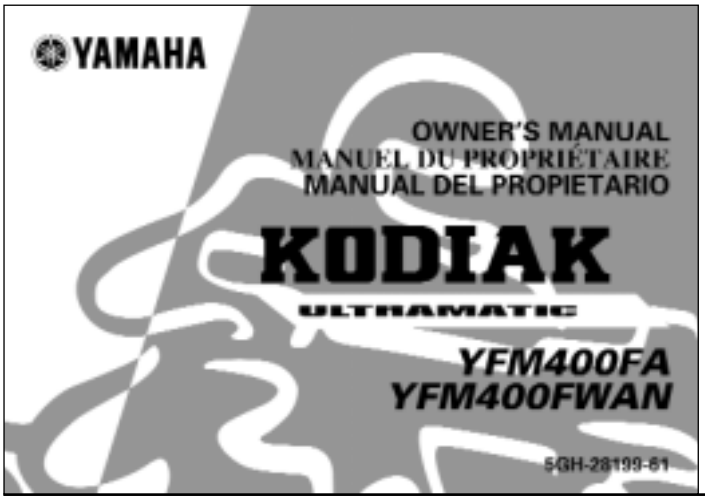
Your ATV Owners Manual

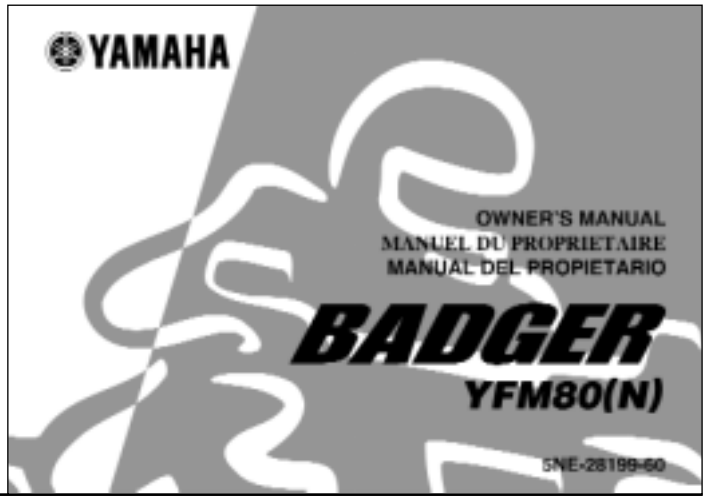
Take the time to carefully read and understand your owner's manual. Paying close attention to the manual could save you from severe or even fatal injury.

Read and comply with all the labels on your ATV. These labels address warnings about potential hazards. If you are unsure about something, check your owner's manual or see your Yamaha ATV dealer.

Government and Industry Accredited Training

Stephen Gall's ATV Safety Institute provides national training to improve the safety of ATV riders through practical training for the sports, rural, government and private industry markets. On successful completion of the ATV rider course, students can receive a nationally recognised **'Statement of Attainment'** to cover industry **WorkSafe** requirements. To become a more skilled ATV rider, contact Stephen Galls ATV Safety Institute on 0755 933340 or email sg_atvsi@bigpond.com.





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So, your are anxious to ride. Before you do, though, be sure you and your ATV are ready. If you are not, or if your ATV isn't checked out, the results can range from embarrassment to severe or even fatal injury.

For your safety, understand and follow all the warnings contained in the Owner's Manual and the labels on your vehicle.

This chapter will introduce you to ideas about safety while operating an ATV. In turn, this introduction will help prepare you to apply the suggestions contained in the remaining chapters.

Activities involving movement and wheels can result in accidents and injuries. However an ATV handles differently from other vehicles including motorcycles and cars. In addition, ATV riding is physically active, another source of risk. You should be aware of these risks in order to manage them and reduce the possibility of injury.

ATV Safety Alert

An ATV Safety Alert has been published. The most current Alert has been printed at the end of this manual. Please ensure that you read the "ATV Safety Alert". It contains important safety information.

Risk Awareness

Knowing the risks and hazards of all-terrain vehicle operation is the first step in developing safe riding behaviour. When you know and understand the hazards of ATV operation you can take steps to avoid them. Some of the hazards can be avoided by using common sense. Riding without a passenger, and not attempting to do stunts, wheelies or jumps are obvious examples of risk reduction. Also, be sure to follow the age and ATV size recommendations for younger riders.

ATV Size	Recommended Minimum Age
Under 70cc	6 years and older
70-90cc	12 years and older
Over 90cc	16 years and older

Some people fail to identify hazardous situations which should be obvious. Swimmers who dive into a shallow pond, the driver who does not slow down in foggy conditions, or the bicyclist who rides against traffic are examples. There are some who think accidents only happen to other people. They behave as if they will never experience the pain and inconvenience of an accident. The ATV rider who knows how to manage risk effectively is putting him or herself at an advantage in ATV riding situations.

The wise ATV rider knows that accidents are not just chance happenings. Most accidents can be prevented with proper planning and responsible behaviour. Some people see accidents as bad luck or focus on a single cause. Safety experts recognise that rarely is there only one cause for an accident or mishap. Usually, a combination of circumstances or events lead up to an accident-producing situation.

Safe ATV riding can depend on your ability to recognise hazardous riding conditions. How well you are able to read the terrain and environment will play a large part in how safe your ride will be.

Riding safely requires the rider to take responsibility for his or her own riding abilities, the riding environment, and the capabilities of the ATV. Riding within personal limits may seem to be simple to do, but many injuries are caused by riders going beyond their abilities. You should look at riding as an activity requiring the interaction of three things: personal ability, ATV capabilities, and environmental or terrain conditions.

Full enjoyment of your ATV requires some of the same kind of precautions associated with other sport and recreational activities. For example, it is important to always wear proper protective gear when operating an ATV, just as you would if you were playing football.

For ATV riding, this includes an approved helmet with adequate eye protection, sturdy over the ankle boots, gloves, long sleeve shirt or jacket and long pants. Depending on the environment in which you ride and your personal skill level, extra body protection may be a wise choice.

Managing Risk

Managing risks means being a good decision maker. A large number of accidents are caused by poor riding decisions. You can learn to organise your thought processes and manage risk by using a thinking strategy to help you. This thinking strategy forms the acronym SEE: Scan, Evaluate, Execute.

SEE is a decision making process that helps you manage risks and enjoy a safe, comfortable ride. Each letter of SEE represents an action for the rider:

S Scan/search terrain and environment and identify hazards
E Evalute and predict what may happen
E Execute your decision based on your skills and your ATV

Part of the risk associated with ATV riding may be effectively managed by wearing protective gear, thinking of the consequences of decisions, and applying the SEE strategy. It is up to you to make the choice to ride within personal limits, within the capabilities of the ATV, and within the limits of terrain and environment.

This information provides insight into some of the risks associated with ATV operation and ways to manage these risks. These topics will be covered in greater details in later chapters.

Chapter 1 - Quiz

1. Most physically demanding activities require special skills and present certain risks.
   True ☐ False ☐
2. Learning information in the Owner's Manual will help a rider become a more safe and responsible ATV Rider.
   True ☐ False ☐
3. An ATV is not a toy and can be hazardous to operate.
   True ☐ False ☐
4. A child under 12 years old should never operate and ATV with and engine size 70cc or greater.
   True ☐ False ☐
5. An ATV is designed to carry an operator and a passenger.
   True ☐ False ☐
6. Most accidents are preventable.
   True ☐ False ☐
7. Riding beyond your limits will not cause accidents if you are a good rider.
   True ☐ False ☐
8. Apparel you should wear while riding includes head and eye protection as well as body protection.
   True ☐ False ☐
9. Managing risks means being a good decision maker.
   True ☐ False ☐
10. SEE is a method to help organise your thought process.
    True ☐ False ☐

Personal safety and comfort are enhanced when you wear protective clothing. Operating without protective clothing increases your chances of severe injury in the event of an accident. Always wear an approved motorcycle helmet that fits properly.

Although complete protection is not possible, knowing what to wear and how to wear it can make you more comfortable when you ride and reduce the chance of injury in case of a spill.

Dressing Like the Pros

Helmets

The single most important piece of protective gear you can wear is a helmet. A good helmet can help prevent serious head injuries. Studies have shown that wearing a helmet does not reduce essential vision or hearing. Operating without an approved motorcycle helmet will increase the chance of severe head injury to yourself in the event of an accident.

What to look for in a Helmet

Standards and Testing

Helmets protect your head in two ways: the outer shell resists penetration and abrasion, and the inner liner absorbs shock by slowly collapsing under impact. Both the shell and the liner essentially self-destruct by spreading the forces of an impact throughout the helmet material. That is why, in most cases, if a helmet has been damaged in an accident it may be of little protective value in another mishap.

When you purchase a helmet, look for stickers inside or on the outside of the helmet, confirming compliance with the standards: Australian Standards - AS1698.

Each organisation has established procedures to evaluate helmets for:

- Impact - the shock absorbing capacity of the helmet.
- Penetration - The ability of the helmet to withstand a blow from a sharp object.
- Retention - the ability of the chinstrap to stay fastened without breaking or stretching.
- Peripheral Vision - the helmet must provide a minimum side vision of 120 degrees each side. (Most people's peripheral vision is between 110 and 115 degrees.

The Right Helmet for You

While colour, design and price may influence your decision about which helmet to buy, protection should be your first consideration.

The full-faced helmet provides the most protection since it covers more of your face. Recent design improvements in shell material and interior ventilation have improved comfort. The next choice in protection is the three-quarter helmet. It does not offer the face and chin protection that full-faced helmets do, so if you choose this style, it should be used with mouth/chin protection.

For a helmet to offer the most protection possible it must fit properly. Your helmet should fit snugly but comfortably and be securely fastened.

Always fasten you helmet's chinstrap snugly. A helmet will do you no good if it comes off during a mishap.

Full Face Helmet

Open Face Helmet

The Right Helmet for Youngsters

A helmet is also the most important piece of protective gear for children. Athletic headgear such as hockey, football or skateboard helmets ARE NOT ACCEPTABLE for ATV riding. They do not have adequate energy absorption qualities for use while operating a motorised vehicle.

As with any helmet, a child's helmet must fit properly to be effective. Do not use an adult-sized helmet that is too large for a youngster. Helmets are available in Children's sizes. Check with your ATV dealer.

Replacing Your Helmet

Plan to replace your helmet if it has been involved in an accident. Some helmet manufacturers will inspect and, when possible, repair a damaged helmet. If your helmet has been dropped, there may be damage that you don't see; you may want to take advantage of this service.

Most helmet manufacturers recommend that, under normal use, you should replace your helmet every two to four years. If you notice any signs of damage before then, replace it immediately. As mentioned above, helmets may crack or break if dropped.

Why replace a helmet every few years if it does not appear damaged? Its protective qualities may deteriorate over time. The interior padding compresses, offering less protection. The chinstrap may fray or loosen at its attaching points and the shell may be chipped or banged. Probably the best reason, however, is the consistent improvement of design and protective qualities of helmets.

Since 1980, all helmet manufacturers have been required to stamp the month and date of production of the helmet. If you cannot remember when you bought your present helmet, just check the production date. If there is no date at all, you should definitely replace your helmet now.

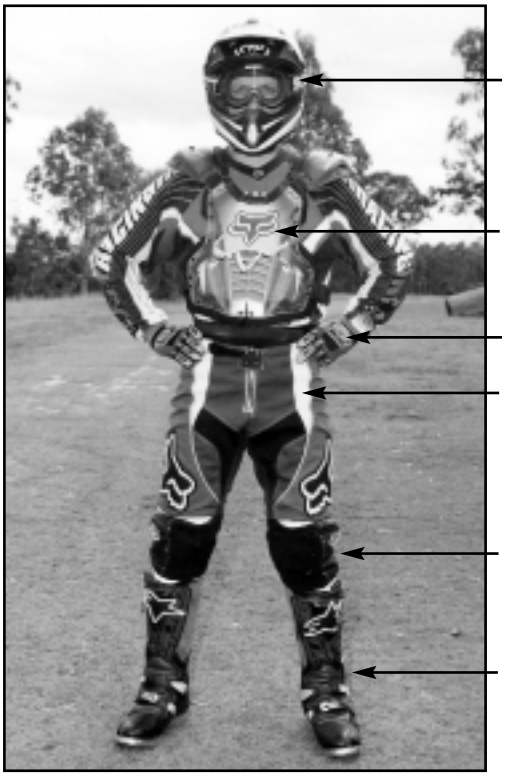
Helmet care

Follow the manufacturer's directions in caring for your helmet. Use only the mildest soap recommended.

Avoid any petroleum-based cleaning fluids, especially if you own an injection-molded plastic helmet. Exposure to strong cleaning agents can cause the plastic helmet and its liners to decompose and lose protective value.

In Short

There are many considerations when deciding which helmet to buy. Talk with you local motorcycle and ATV dealer, and consult ATV enthusiast magazines for information to help in you decision.



Eye Protection

Being able to see clearly will help you ride more safely. Operating without eye protection can result in an accident and increases your chances of a severe eye injury in the event of an accident. An object such as a rock, branch or even a bug that hits you in the face can distract you; but if you are hit in the eyes, you could be blinded. Regular sunglasses do not provide enough protection when riding an ATV. A face shield or goggles will help protect you.

They should be:

- Free from scratches, preferably bearing the standard marking AS1337, or constructed of a hard-coated polycarbonate.
- Securely fastened.
- Tinted for riding on bright days, clear for night riding or yellow for overcast days.

Gloves

Gloves should be of the quality that will help prevent your hands from getting sore, tired or cold, as well as offer protection in the event of a spill. Off-road style gloves, available at motorcycle and ATV dealerships, provide the best combination of protection and comfort. They are padded over the knuckles for added protection. Leather gloves should be avoided as they stretch and become slippery when wet.

Boots

The minimum protective footwear is a pair of strong, over-the-ankle boots with low heels to help prevent your feet from slipping off the footrests. Off-road style over-the-calf ATV or motorcycle boots offer the best protection for feet, ankles and legs.

Clothing

It is important to protect your skin from scratches. A long-sleeved shirt or jersey and long pants are minimum requirements for rider protection. Off-road riding gear, (such as jersey; shoulder pads/chest protector; and off-road pants with knee and shin pads) provide better protection.

Chapter 2 - Quiz

1. Your first consideration when purchasing a helmet should be price.
   True ☐ False ☐
2. A helmet may not protect the head in a spill if the chinstrap is not fastened.
   True ☐ False ☐
3. Operating without eye protection can lead to an accident.
   True ☐ False ☐
4. A helmet slightly damaged in a minor impact can still offer adequate protection.
   True ☐ False ☐
5. Wearing a helmet will reduce normal peripheral (side) vision.
   True ☐ False ☐
6. Open-faced helmets provide more protection than full-faced helmets.
   True ☐ False ☐
7. Athletic headgear is suitable for ATV riding.
   True ☐ False ☐
8. There are gloves available specially made for off-road riding.
   True ☐ False ☐
9. Tennis shoes provide adequate protection in off-road riding situations.
   True ☐ False ☐
10. Warming up by stretching the muscles will help prevent strains while riding.
    True ☐ False ☐

Stretching - Lower Body

1. QUADRICEPS: Keep your knee pointed at the ground and hold the stretch. Hold onto the ATV only for balance.

HAMSTRING: Face the ATV, put your leg up on the footpeg or seat of your ATV (or handlebar if you are really flexible!) and stretch. Keep your back and knee straight.

HIP FLEXOR & UPPER THIGH: Lean forward as shown, putting your weight on your rear foot but keeping both feet pointing forward.

TORSO & LOWER BACK: Hang onto the handlebars with one hand and the rear carry rack with the other and twist at the hips. (Repeat other way.)

Warming Up

Riding an ATV requires a lot of body movement. Doing warm-ups before you stretch, will help prevent muscle strain and injury.

Stretching

Remove large and sharp objects from pockets. Do not overexert yourself on warm-up exercises. These are minimal exercises and repetitions suggested for warming up. As with any strenuous activity, you should consult your doctor if there is any doubt about you being in shape to ride. Sore muscles or joints could limit your movement and require you to take extra precautions when riding.

Stretching Exercises

Possibly one of the areas most neglected by ATV riders these days is that of injury prevention through stretching. It's only when you fall off and are flexible enough to avoid injury that you will really reap the benefits of stretching.

The Stretching Routine

Before you proceed with the following stretching exercises, you should warm-up your muscles by doing a brisk walk or jogging on the spot for a few minutes.

When stretching, make sure you don't push too hard too soon – stretching shouldn't hurt. Gently stretch each muscle rather than bounce

UPPER FOREARM: With your palm face down with the other hand, bend your wrists. Keep your elbows and palms of your hands as straight as possible.

LOWER FOREARM: Very similar to the upper forearm exercises. Push forward and bend at the wrist, keeping your hand straight.

NECK: SIDE: Tilt your head towards your shoulder to feel the strain down one side of your neck. Stretch your neck to the left and right side.

SHOULDER: Pull one elbow across in front of you and then hold it with your other arm. You will feel the strain across your shoulder.

NECK: FORWARD: Pull your chin down to your chest and gently back.

SHOULDERS #1: Interlock fingers and stretch your arms out in front of you, keeping your elbows as straight as possible.

SHOULDERS #2: This is the same as the previous exercise except stretching upwards.

SHOULDERS #3. Clasp your hands together behind your back and pull your arms upward.

it. Hold for 20 to 30 seconds when you feel a slight stretch, continue breathing and try to ease into a further stretch and then release.

And remember, not everyone is as flexible as one another, so take it carefully when you do your stretches.

Getting Familiar With Your ATV

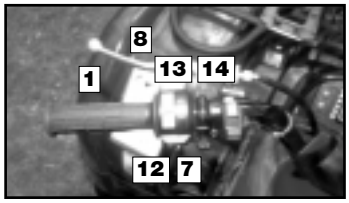
Read and study the Owner's Manual carefully, and look at your ATV to memorise the location of the controls.

Know Your Controls

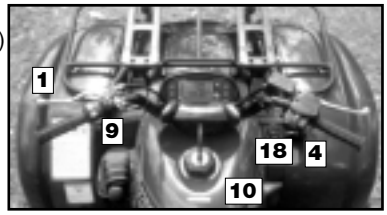
The controls shown here are typical - refer to your owners manual as they may vary from model to model)

Identify these controls (if equipped):

1. Rear brake lever
2. Front brake lever
3. Rear brake lever or pedal
4. Throttle
5. Ignition Switch
6. Fuel supply valve
7. Choke (primer)
8. Clutch (on clutch models)
9. Engine stop switch
10. Gas cap/tank vent
11. Shift lever (on clutch models)
12. Starter (eg. pull, kick, electric)
13. Light on/off switch
14. Light high/low switch
15. Headlight
16. Reverse gear lever
17. Transmission high/low lever
18. Diff lock



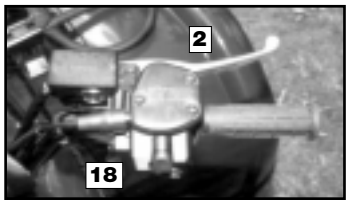
Left Handlebar Controls



Handlebars

Not shown

- Throttle limiter screw
- Steering lock
- Seat release lever
- Suspension adjustments



Right Handlebar Controls

Mounting your ATV

To mount your ATV correctly:

- Set the parking brake.
- Grasp the handlebar with your left hand.
- Place your left foot on the footrest - do not step on the shift lever.
- Lean over, grasp the handlebar with your other hand.
- Swing you leg over the seat and place your foot on the other footrest.
- Seat yourself in a comfortable position.
- Keep your feet on the footrests at all time, even when the engine is not running.
- Practise mounting using the controls until you can operate the controls without looking at them.

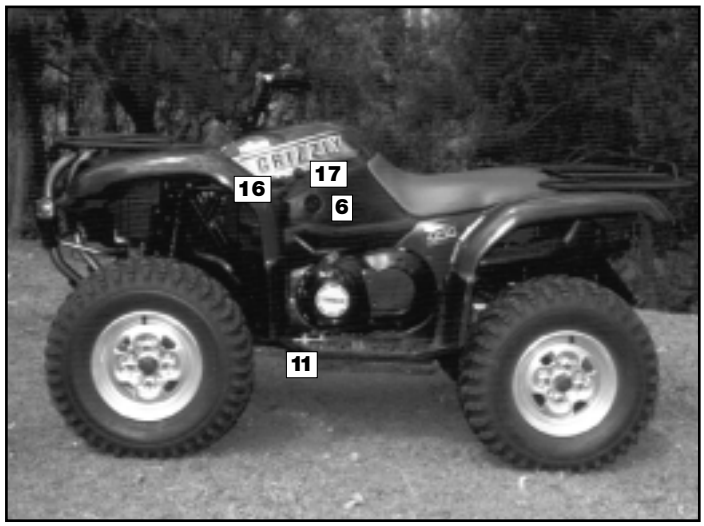
Dismounting your ATV

To dismount your ATV correctly:

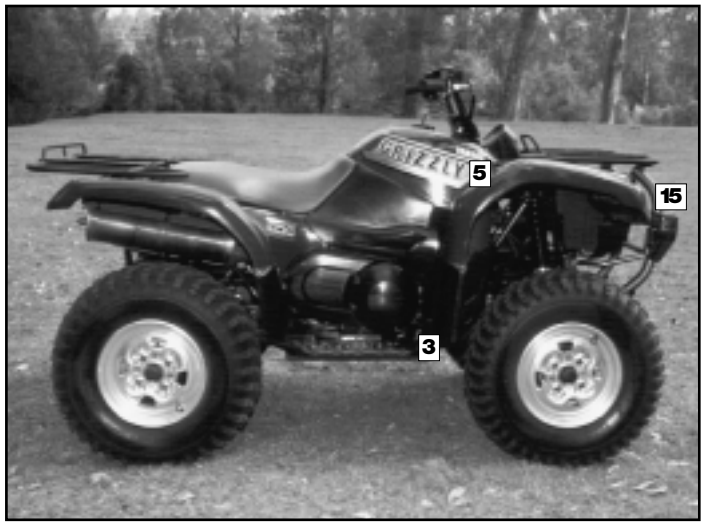
- Set parking brake.
- Stop engine using engine stop switch.
- Turn off ignition, fuel valve and vent cap (if present).
- Follow the steps for mounting in reverse order.

Checking Your ATV

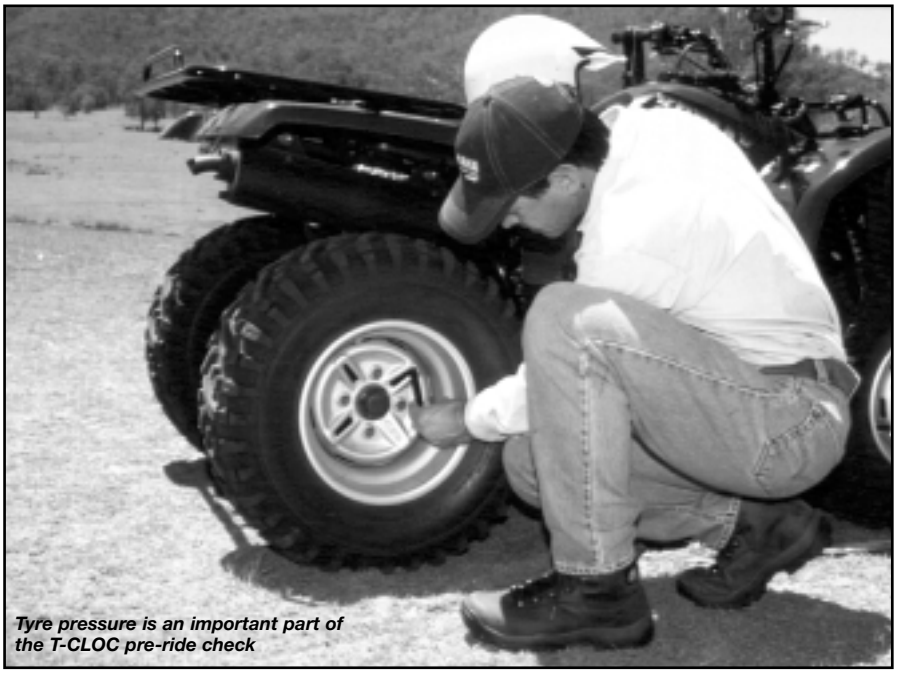
A pre-ride inspection of your ATV's mechanical condition is important to minimalise the chance of injury or being stranded, as well as to ensure the long-term enjoyment of your ATV. Remember, you can ride farther in an hour than you can walk in a day. Always inspect your ATV each time you use it to make sure the ATV is in safe operating condition. Follow the inspection and maintenance procedures described in your owner's manual. Pay special attention to warnings in your manual and on all labels on the ATV. Never modify an ATV through improper installation or use of accessories. All parts and accessories added to an ATV should be genuine or equivalent components designed for use on that particular ATV, and should be installed and used properly. If you have questions, consult an authorised ATV dealer.



Left view of ATV



Right view of ATV


Tyre pressure is an important part of the T-CLOC pre-ride check

Performing a Pre-ride Inspection

An easy way to remember what to check before riding is the acronym T-CLOC.

Tyres and wheels **T**	1. Air pressure - Always have the recommended tyre pressure. Be sure front tyres and both rear tyres are inflated to equal pressure. If the tyre pressure on one side is higher than the other side, the vehicle may pull to one side. 2. Condition - Check for cuts or gouges that could cause air leakage. 3. To avoid loss of control or injury, make sure axle nuts are tightened and secured by cotter pins. Check these before every ride.
Controls and Cables **C**	1. Controls - Check the location of all the controls by sitting on the ATV. Make sure they work properly, and are comfortable to use. 2. Throttle and other cables - Make sure the throttle moves smoothly and snaps closed with the handlebars in any position. An off-road environment is hard on cables. 3. Brakes - Do the controls operate smoothly and are the controls adjusted according to the owner's manual? Are they positioned for easy reach? Your brakes are a crucial part of riding and must always be in tip-top condition. 4. Foot shifter - Is it firmly attached and positioned for safe operation? 5. Are the controls comfortable to use? Make adjustments as required.
Lights and Electrics **L**	1. Ignition switch (if equipped) - Check the condition of the switch and make sure it works properly by switching it off and on during your warm-up period 2. Engine stop switch - Does it turn off the engine? 3. Headlight, stop and taillight (if equipped) - Are they working? You could be caught out after dark.
Oil and Fuel **O**	1. Do not get stranded because you are out of oil or fuel. Know your ATV's cruising range. 2. Check oil level with dipstick or sight glass while the engine is off. Check your owner's manual for procedure. 3. Always start your ride with a full fuel tank. 4. Check for fuel or oil leaks. 5. Take off the filter cover and check the condition of the air filter element. Be sure it is oiled and clean and not torn or blocked.
Chain and drive shaft chassis **C**	1. Chain - Inspect, adjust and lubricate the chain regularly. Your chain is the vital link from the engine to the wheels. Check for chain slack or free play so that it is within specifications as described in your owner's manual. 2. Drive shaft - If our ATV is equipped with a drive shaft rather than a drive chain, check for oil leaks. Maintain its oil supply as outlined in your owner's manual. 3. Nuts'n'Bolts - Riding in rough terrain will loosen parts. Look and feel for loose parts while the engine is off. Shake handlebars, footrests etc., before each ride and periodically check fasteners. 4. Check shock absorbers and mounting bolts.

Tool Kit

Emergency situations can arise with any motor vehicle; running out of fuel, a burned out headlight at night, or unknown hazards on the trail. These situations are not only inconvenient, but can result in unsafe conditions for ATV riders.

Riding off-road is not like being on a freeway with your car - a tow truck is not just a phone call away. Since ATVs are for off-road use only, riders must be prepared by taking the right safety precautions. Fortunately, most ATV problems can be fixed on the trail if you carry a minimum assortment of tools and spare parts and know how to use them.

Each ATV comes with a basic set of tools. Along with tools you should carry an extra spark plug (or two).

On extended rides or long trips, more than the basic tools should be carried to help make repairs, such as: electrical tape, spare bulbs, mechanic wire, duct tape, knife, a flashlight if your ride after dark, and a tow strap or length of rope that can be used if repairs are not possible. These items should be carried in an addition to a well-stocked survival kit (page 21).

Following your owner's manual maintenance schedule will help prevent most breakdowns, but once in a while your ATV may fail. If you are riding kilometres from help, carrying the above items could save you a long walk. Remember you will not have your walking shoes on!

Chapter 3 - Quiz

1. To learn the location of the ATV's controls, read the owner's manual.
   True ☐ False ☐
2. A rider should know the location and function of all the controls on an ATV before riding.
   True ☐ False ☐
3. Looking at the controls while riding is a safe action.
   True ☐ False ☐
4. You should keep your feet on the footrests at all times.
   True ☐ False ☐
5. You should engage the parking brake after safely dismounting your ATV.
   True ☐ False ☐
6. If you do not inspect your ATV before riding, you decrease your chances of an accident.
   True ☐ False ☐
7. Improper tyre pressures may affect the operation of an ATV.
   True ☐ False ☐
8. To remember the pre-ride inspection procedure, use the acronym T-CLOC.
   True ☐ False ☐
9. The basic ATV tool kit is enough to carry when going on extended rides.
   True ☐ False ☐
10. It is best to use genuine replacement parts for your ATV.
    True ☐ False ☐

Starting The ATV

When you start your ATV you are responsible for controlling it. Read the owner's manual section on starting your ATV and use the starting procedure represented in the letters BONE-C. Practising this procedure will help you start the engine quickly and efficiently.

Starting Procedures

Brakes **B**	1. Set the parking brake or for a fully automatic transmission ATV put into park.
On **O**	2. Turn the fuel valve to ON or RESERVE position, depending on how much fuel is in the machine. Turn ignition key on, if equipped.
Neutral or Park **N**	3. Check that the transmission is in NEUTRAL or park. To make sure it is in neutral, check the NEUTRAL indicator, if equipped. If necessary, release the parking brake, rock the machine back and forth keeping your feet on the footrests, then reapply the parking brake. Or for a fully automatic transmission ATV, put into Park.
Engine **E**	4. Check that the engine stop switch is in the RUN or START position. The engine stop switch is usually found by either the left or right hand grip.
Choke **C**	5. If the engine is cold, put the CHOKE in the ON position. Check your owner's manual for choke location. 7. Start the engine according to the directions in your owner's manual. 8. Once the machine is warmed up, return the choke to its normal position. This is very important because if you do not, the machine will not run properly.

Chapter 4 - Quiz

1. The correct way to start a particular ATV is in the owner's manual. True ☐ False ☐
2. A way to remember the engine starting procedure is to use the acronym T-CLOC. True ☐ False ☐
3. Part of the engine starting routine is being sure the parking brake is set. True ☐ False ☐
4. Some ATVs have an "on/off" vent on the fuel cap. True ☐ False ☐
5. The engine should be started with the transmission in first gear. True ☐ False ☐
6. The parking brake should be engaged when rocking the ATV to check for neutral. True ☐ False ☐
7. Keep your feet on the footrests when rocking the ATV to check for neutral. True ☐ False ☐
8. The engine stop switch is located in the fuel tank. True ☐ False ☐
9. Put the choke in the "on" position when starting a warm engine. True ☐ False ☐
10. The fuel valve should be turned to the "on" or "reserve" position before starting the engine. True ☐ False ☐

Before starting out, be sure to review your owner's manual paying special attention to the warnings and procedures. Remember to always wear the proper protective gear while operating an ATV. Be sure riders under the age of sixteen are under adult supervision while riding. Bring an experienced rider along to help you if you have problems.

The first step is mastering the basic skills needed by an ATV rider. These include riding in a straight line, shifting and braking. Learning these basics is essential in advancing your abilities as an ATV rider.

Posture

The correct riding posture will help you to easily operate the controls and help you react more quickly when shifting your body weight. Proper straight line riding posture includes:

- Head and eyes up, looking well ahead.
- Shoulders relaxed, back straight.
- Elbows bent, slightly away from your body and slightly above the height of the handlebars.
- Hands on the handlebars.
- Knees in toward the tank.
- Feet on the footrests, toes pointing straight ahead.

When you sit forward on the seat the ATV will pivot underneath you. Always keep both hands on the handlebars and both feet on the footrests of your ATV during operation. Removing even one hand or foot can reduce your ability to control the ATV or could cause you to lose your balance and fall off. If you remove a foot from a footrest, your foot or leg may come into contact with the rear wheels, which could injure you or cause an accident.

ATVs are rider-active; to enhance the performance capabilities of the ATV you must shift your body weight. This is especially true in manoeuvres such as turning, negotiating hills, and crossing obstacles. These operating techniques are covered in more detail in later chapters.

Starting Out

When starting out:

- Make sure the parking brake is set.
- Mount the ATV from the left side.
- Start the ATV using BONE-C.
- Hold the rear brake.
- Shift into first gear. (See your owner's manual for procedure for your model ATV.)
- Release the parking brake.
- Release the rear bake and slowly apply the throttle.
- If your machine has a manual clutch, release the clutch slowly, while gradually increasing the throttle. If the clutch is engaged suddenly the ATV might move abruptly, causing you to lose control.
- Remember to keep your feet on the footrests at all times!

When riding in a straight line, remember to look well ahead, where you want to go, not at the controls or immediately in front of the ATV. This will help you maintain a straight course.

Shifting Gears

Because there are several types of ATV transmissions, you must be certain you know how to shift the transmission of the ATV you are riding.

- Always release the throttle while shifting to prevent the front wheels from lifting.
- Learn the sounds of your engine so you know when to shift to keep the engine speed in the most efficient range.
- If your ATV has a manual clutch, learn where the friction zone is to prevent stalling and allow smooth shifting.
- Some ATVs are equipped with reverse gear. Improperly operating in reverse could result in serious injury. Follow these recommendations when operating in reverse.
- Look behind you for obstacles or people.
- When it is safe to proceed, operate slowly.

Braking

Look ahead when braking, not at the ground immediately in front of you, Following these tips will help you make smooth, controlled stops.

- Release the throttle.
- Shift to a lower gear to use the engine to slow the vehicle.
- Apply both brakes equally (if equipped).
- Avoid excessive braking while cornering. Do most of your braking before the turn.
- Apply both brakes lightly on slippery surfaces.
- Keep head and eyes up.
- Keep your feet on the footrests at all times.

Parking

- When parking your ATV always try to find flat ground, and:
- Shift into neutral.
- Stop the engine with the engine stop switch, and if equipped, turn off the ignition switch.
- Set the parking brake, or shift into a low gear if you do not have a parking brake, to keep the ATV from rolling.
- Turn the fuel off.

Chapter 5 - Quiz

1. When riding an ATV, it is best to wear proper protective gear. True ☐ False ☐
2. Operating an ATV requires that both hands be firmly on the handlebars. True ☐ False ☐
3. The brakes should be used when shifting into first gear from neutral. True ☐ False ☐
4. When starting out in first gear, it is safest to look at the controls. True ☐ False ☐
5. Always release the throttle while shifting. True ☐ False ☐
6. A rider should learn the sound of the ATV engine for better operation. True ☐ False ☐
7. To make slower speed stops, use only one brake. True ☐ False ☐
8. It is best to do most of your braking before entering a turn. True ☐ False ☐
9. It is best to look down at the stopping point when using the brakes. True ☐ False ☐
10. It is proper to shift into a lower gear when coming to a stop. True ☐ False ☐

Turning

Handling characteristics for ATVs vary depending upon basic design and how they are equipped. The turning information in this handbook applies to most ATVs with one exception: ATVs with unlocked differentials. If your ATV has a differential, be sure to lock the rear axle before practicing the turning techniques in this handbook. Refer to your Yamaha owner's manual for instructions.

ATVs with solid rear axles, and those with locked differentials, turn both rear wheels at the same speed. This means when turning, the inside wheel must "slip" slightly on the surface (see Figure 1). ATVs with unlocked differentials allow the rear wheels to turn at different speeds. If a rear wheel on an ATV with an unlocked differential leaves the ground, it will spin freely. Then when it touches the ground again, it my grab and cause you to lose some control.

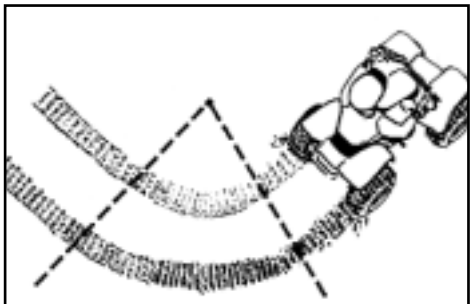


Fig. 1

Turning Basics

Always check your owner's manual for the recommended turning techniques for your ATV. The following basic turning technique applies to ATVs ridden at low to moderate speeds. Be sure to practice turning at low speeds before attempting to turn at faster speeds. Do not turn at excessive speed.

At Low Speeds

- Move your body weight forward and to the inside of the turn.
- Turn the handlebars while looking in the direction of the turn.

As you increase speed or turn more sharply, move your body weight farther toward the inside of the turn to maintain your balance.

If your ATV starts to tip while turning, lean your body farther into the turn while gradually making the turn wider, if possible.

At Higher Speeds

The method of turning at a higher speed is similar to turning at lower speed. The difference is that as speed increases you must lean farther forward toward the inside of the turn. This is to counteract the higher centrifugal forces as cornering speed increases.

If your ATV starts to tip toward the outside of the run while turning, lean your upper body farther into the turn while gradually reducing throttle and if possible, make the turn wider by straightening the handlebars. Keep you feet on the footrests.

Sharp Turns

Learning to make sharper turns through practice will help you respond to crooked trails or obstacles within your path.

Be sure to slow down before the turn. Keep your eyes up, looking through the turn at your intended path of travel. Watch for terrain irregularities so that you can slow down as necessary. Sharper turns require more leaning in the direction of the turn. If an error in judgement causes the ATV to start to tip toward the outside of the turn, straighten the handlebars or lean your upper body more into the turn.

Remember it is important to first practice gradual turns and then progress toward sharper turns as your riding skills develop. Be patient and practice basic skills before moving on to more difficult manoeuvres.

Quicker Turns

Quicker turns are sometimes required to avoid obstacles in your path. You should practice coordinating speed, body position and weight shift to help you make quick directional changes.

Keep your feet on the footrests to maintain maximum control for manoeuvring the ATV. Quicker turns require quicker weight shifts. It helps to rise off the seat slightly (not standing up). Quicker turns are sometimes easier to negotiate if you combine a short burst of throttle with the proper weight shift. Look well ahead and allow the ATV to move underneath you. As with any turn, if the ATV starts to tip toward the outside of the turn, slow down and straighten the handlebars and/or lean more to the inside of the turn. Adjust your speed to match conditions.

Chapter 6 - Quiz

1. Most ATVs are equipped with solid rear axles. True ☐ False ☐
2. Improperly turning, particularly at higher speed, can cause an ATV to tip to the outside of the turn. True ☐ False ☐
3. When turning you should lean away from the turn. True ☐ False ☐
4. If an inside wheel starts to lift while you are turning, you should straighten the handlebars or lean farther into the turn. True ☐ False ☐
5. To turn an ATV at low speeds it is helpful to shift your body weight to the rear. True ☐ False ☐
6. When preparing to turn, you should slow down before the turn. True ☐ False ☐
7. Gradual turns require more skill than do sharp turns. True ☐ False ☐
8. Quick turns are easiest with your body weight on the back of the seat. True ☐ False ☐
9. The best way to perform a quick turn is to apply equal pressure on the right and left footrests. True ☐ False ☐
10. You should look ahead in your intended path of travel during a turn. True ☐ False ☐

Applying a good riding strategy will decrease the likelihood of having to make a quick stop. Scan and identify potential hazards several seconds ahead in your path of travel. Practice quick stops in a flat open area so you can get used to how your ATV responds to your input. Be especially careful on excessively rough, slippery or loose terrain.

This is a more advanced riding skill. Remember, do not exceed your capabilities.

Stopping Quickly

Because nature is constantly changing, you must be prepared to stop quickly, slow down or swerve to avoid obstacles, such as fallen trees or washouts across your trail. An animal may dart out in front of you, or you may meet another rider as you round a bend. Never ride faster than your visibility allows.

A quick stop could be necessary at any time, so remember:

- Ride within your ability.
- Use both brakes when stopping. Although the front brake (in the forward direction) does provide the majority of stopping power.
- Slow your ATV when cresting a hill or going through a turn.
- Never ride past your limit of visibility.
- If you accidentally lock the wheels, release the brakes momentarily and reapply the brakes more gradually.
- Keep your feet on the footrests.

Swerving

You should be able to make emergency swerves to avoid unexpected hazards when riding. Follow these guidelines to help prevent mishaps:

- Keep your feet on the footrests.
- Look in the direction of the swerve
- Shift weight to the inside of the turn.
- DO NOT brake while swerving - brake AFTER swerving and only after the ATV is travelling in a straight line.
- A short burst of throttle will help the ATV to turn.

Chapter 7 - Quiz

1. Using a good riding strategy will decrease the chances of having to stop quickly. True ☐ False ☐
2. Making a quick stop or performing a swerving manoeuvre is easier at faster speeds than slow speeds. True ☐ False ☐
3. You should never ride faster than your visibility allows. True ☐ False ☐
4. The sudden appearance of an animal during a trail ride may require a rider to perform an emergency manoeuvre. True ☐ False ☐
5. A quick stop in a straight line requires more skill than making a quick stop in a turn. True ☐ False ☐
6. You should not brake and swerve at the same time. True ☐ False ☐
7. When swerving, you should look in the direction of the swerve. True ☐ False ☐
8. Braking and swerving at the same time could result in a spill. True ☐ False ☐
9. Stopping quickly or swerving are considered more advanced riding manoeuvres. True ☐ False ☐
10. Your feet should be kept on the footrests during an emergency manoeuvre. True ☐ False ☐

You need to know the area in which you are riding and what you and your ATV can do in order to have a safe, enjoyable ride. Your riding areas may not have the types of terrain discussed in this chapter, but it is still wise to know the strategies to ride in them.

Reading the Terrain

Choose places in which you can ride safely. Stay on existing trails. Be aware of terrain where you do not belong, like steeper slopes, impassable swamps and other hazardous situations. Keep a watchful eye for sharp bumps, holes, ruts, obstacles, wildlife, and other trail users.

Reading the terrain means to observe and understand the features and characteristics of the land on which you are riding. This includes surface composition, slope or camber of the trail, hills, rocks, tree stumps, creeks, vegetation, fixed objects etc.

Learn to read the trail as you ride. A wise rider watches well ahead on the trail. Know what is coming; be ready to react long before you get there. Be constantly alert for hazards and changing terrain conditions. Ride within your ability, not beyond your capabilities. Do not operate on excessively rough, slippery or loose terrain until you have learned and practiced the skills necessary to control your ATV on such terrain. Adjust your speed to trail conditions and visibility. A responsible rider stays out of trouble not simply by handling the machine well, but by riding safely and avoiding risky situations in the first place.

Choosing Proper Speeds

Always look well ahead and choose a speed that is proper for the terrain, visibility, operating conditions, and your experience.

By scanning far enough down the trail, you will be able to pick the best “lines” (or safest path of travel) around or over hazards or small obstacles. As you approach a hazard, do not fixate on it, but rather continue to search for other clues in the environment and adjust speed well in advance.

Using S.E.E.

There is an acronym to remind you of the procedures for scanning trails and making riding decisions: “SEE”. Each letter in SEE refers to steps needed to identify and respond to potential hazards in the lay of the land. Consider the consequences of possible choices and respond with the correct manoeuvring skill.

Scan **S**	* Keep eyes moving and search the terrain * Check overall environment * Watch several seconds ahead * Avoid fixating on any one object * Identify hazards * Pick out specific problems * Consider surface composition * Other trail users and wildlife and stationary objects
Evaluate **E**	* Predict what may happen * Think of consequences * Consider riding techniques necessary * Predict results of choices * Decide what to do - Slow down so there is time to react - Pick the best line or path. Consider traction, obstacles within skill level, visibility - Choose to reduce risk - Choose to stay well within personal limits and capabilities of your ATV
Execute your decision **E**	* Adjust technique * Adjust speed * Adjust path of travel

Practising S.E.E.

An illustration of a rider’s thought process is described in this example. In real-world ATV operation, the riding terrain constantly changes, requiring a rider to continually process information and make decisions. The following example shows how SEE can be used in this one “picture”. This thought process must be seen as only a moment within a changing environment.

How might a rider specifically use SEE? What might he or she think? A snapshot entering a rider’s eyes and brain is shown here. Let’s eavesdrop on the thinking strategy.

- SCAN. Open area with path of travel along hill crest. Narrow, dry path. Bumpy terrain, shrubs and obstacles. Drop-off next to trail’s path. Identify a narrow trail along ridge. Steep drop-offs on sides. Poor visibility over crest. Dip in surface ahead.
- EVALUATE. Predict what may happen if other riders come from the other direction resulting in a collision. Riders may be coming from the sides. Getting too close to the edge of the trail could cause you to go over the road side embankment. May have to react quickly. Not much escape area if trouble develops. Decide to slow, stay in middle of trail. Look for approaching riders. Stand up for better visibility and adjust weight if need for uneven terrain. If path is clear, gain momentum to get up next hill area.
- EXECUTE. Release the throttle, apply both brakes. Weight up off seat - continuing to scan, search and think.

Trail Riding

Plan your ride carefully; do not take a trail that requires skill and techniques beyond your abilities or the capabilities of your ATV. Ensure that it is legal to ride your ATV on trails open to the public or that you have the owners permission to ride through private land. Be careful going from a sunny to shaded trail. Ruts or rocks may “hide” in the shade and your eyes may not adjust quickly enough to see them in time. Gradient lenses can also help in these conditions. Standing up in the footrests will aid your ability to take on rough terrain. Remember, be prepared to meet oncoming traffic as most trails allow two-way travel.

Most properly designed trails are “off-cambered” to allow rain run off. This means you will need to keep your weight shifted into the slope.

If you must ride at night, be sure both headlight and taillight are working. Never stop just before a turn on the trail; pull well off the trail when you stop for a break. Be highly visible to other trail-riders. At night if stopping on the trail, turn a light on so that other riders will see you.

Know Where You Are Riding

If you are planning to ride in an unfamiliar area, contact local organizations like a motorcycle club, horse riding club and the local Parks and Wildlife authorities to ensure you know which areas are ok to ride and which areas you should stay clear of.

Crossing Roads and Highways

ATVs are designed to be used OFF-ROAD ONLY. But on occasion you may find it necessary yo cross a road or highway. This is common in farming areas where ATVs are used for various work purposes. If you do need to cross public roads ensure that you seek permission from the relevant authorities. A leading cause of accidents and fatalities to ATV riders is from riding on or crossing the road illegally or improperly. The hazards of road crossing cannot be over-emphasized. Your ATV will handle differently on pavement and may be difficult to manoeuvre. Besides using caution and courtesy, follow your state’s laws to cross a road and ensure you have the legal permission to do so. If you must cross a road, use the following guidelines:

- Bring your ATV to a complete stop on the shoulder of the road. If you are riding in a group, have the first rider (leader) dismount and watch for traffic as he waves the group across the road. Have the last rider dismount after crossing and watch traffic for the group leader.
- Yield the right of way to all oncoming traffic. Look both ways.
- Cross the road at a 90 degree angle where there are no obstructions and your visibility is good.
- Make sure you know your state’s laws and legal procedures before you cross any road.
- Remember, crossing roads improperly or illegally riding on the road is a major cause of serious accidents and fatalities to ATV users, so use extra caution.

Always assume that drivers DO NOT SEE YOU, since most drivers look for cars, not ATVs.

Riding Different Terrain

Sand Dunes

Dune riding offers great thrills and fun, but certain safety precautions are necessary to fully enjoy this type of terrain. Make sure your ATV is equipped with an antenna flag so others can see you better. The safety flag should be a bright colour and the antenna at least 3 metres from ground to tip (with the tip lighted at night).

Dunes shift in size and shape. Drop offs can be created in a matter of hours. NEVER assume that what you rode on yesterday will be the same today. When the wind blows, the tracks you left ten minutes ago could vanish; the path you travelled a few hours ago can require a completely different riding strategy. Assume wet sand is unstable and could be quicksand. Do not attempt a crossing unless you know it is a safe area. Avoid riding on vegetation since it helps stabilise the dunes and may also hide an obstacle or hazard. Be aware of “slip face” dunes which have a gradual incline on one side (usually the windward side) and nearly a straight drop-off on the other side (leeward). Be careful of “razorbacks” which have a steep angle on both sides. When riding up a dune be prepared to make a U-turn if there is a drop-off. Dunes may vary in shape, size and direction. Learn the characteristics of the dune system in which you are riding.

Be extra careful when the sun is directly overhead because there are no shadows to indicate holes, drop-offs or changes in terrain. A three-to-four inch heat haze can appear on top of the sand on warm, sunny days, creating an illusion that the surface is level where instead large bumps and holes may exist. A wise rider will travel slower under these conditions. A gradient (dark at top and clear at bottom) or dark lens in your goggles can help distinguish dips, drops and holes in the sand. Wear only clear lenses at night. Remember, night riding demands extra caution; it is best to slow down. When stopping for a rest, day or night, park at the crest of a dune. You will be more visible and have a better view.

Riding Through Mud and Water

Your ATV is equipped to ride through mud and shallow water, but you should avoid water crossings where you might cause damage to streambeds, fish spawning grounds, or where you might cause erosion to the banks of a stream or creek. This precaution not only adds to your own personal safety and fun, but it preserves the environment for others to enjoy as well. If you are riding through mud and water, remember the footrests may become slippery. Remember, water levels may change from hour to hour. Safely determine the depth of the water or mud before riding through it. If in doubt, push a long stick into the water to help you determine its depth.

Never operate your ATV in fast flowing water or in water deeper than that specified in your owner’s manual. Check you owner’s manual to find out the maximum depth your ATV can negotiate safely.

If you cross a stream, or go up and down stream banks, use an established ford or ride where the banks have a gradual incline. This will help minimise the impact on the stream bank.

Your body position is very important when riding in mud or water. To maintain proper balance or maximum traction, be prepared to shift your weight in any direction. You may find it necessary at times to rock the ATV from side to side to work it out of a hole. Remember to continue to search and scan as you ride through mud or water; watch carefully for submerged obstacles.

Proceed at a slow steady speed, avoiding obstacles and slippery rocks. Do not ride through unfamiliar water too quickly. Mud and deep water may slow the ATV abruptly and could cause a loss of control if you enter too swiftly.

Use a moderate speed with higher than usual engine speed. Remember that wet brakes may have reduced stopping ability. Test your brakes after leaving water. If necessary, apply them several times to let friction dry out the linings.

After riding in water, be sure to drain any trapped water by removing the drain screws (if equipped, check your owner’s manual.) Clean your ATV with fresh water if you have ridden in or near seawater.

To prevent loss of traction in mud or snow, allow the tyres to rotate at a speed that enables their knobs to “bite”. Do not spin the tyres quickly; they will only dig a hole, splatter you with mud, and you will not travel any faster. Watch for mud build up on the engine, chain, and the rest of the ATV.

ATV Accessories, Loading & Towing

ATV accessories, heavy loads and towing can affect the handling and stability of your ATV. **Refer to your Yamaha Owners Manual before purchasing or fitting accessories; or before loading or towing with your ATV.**

Accessories

Accessories can affect the handling and control of your ATV. When purchasing accessories or operating an ATV with accessories it is important to keep the following in mind.

1. Choose only accessories designed specifically for your ATV. Your Yamaha dealer will have a number of genuine accessories available for your ATV. For other aftermarket accessories available ensure that they do not exceed your ATV's load limits and consult your Yamaha dealer.
2. Make sure your accessories are securely mounted. If an accessory shifts or comes off, it could affect your ability to control the ATV.
3. Do not mount the accessory where it could interfere with your ability to operate the ATV safely.
4. The ATV will handle differently when accessories are fitted. Use caution at all times.

Loading & Towing

You must use common sense and good judgement when carrying cargo or towing a trailer, as a trailer or a load can affect the stability and handling of your ATV.

Keep the following points in mind:

- Never exceed the maximum load limits specified in your Yamaha owners manual.
- Do not exceed the maximum tongue weight as specified in your manual.
- Load cargo on the carrier as close to the centre of the vehicle as possible.
- Put cargo just forward the centre of the trailer ensuring it does not exceed tongue weight. Centre the load from side to side.
- Tie down the load securely. If the load shifts it can cause an accident.
- Make sure the load does not interfere with controls or your ability to see where you are going or shifting body weight.
- Ride more slowly than you would normally. The more weight you carry, the slower you should go.
- It's a good idea to use low range whenever you are carrying heavy loads.
- Allow more braking distance. Heavy loads take longer to stop.
- Avoid making sharp turns unless at very low speeds.
- Choose terrain carefully. Avoid hills and rough terrain.
- Use 4WD if fitted.

Effects of Alcohol, Drugs and Fatigue

Riding an ATV can be more demanding than driving a car. You have to be in good physical and mental condition to ride safely. Three things that keep ATV users from being in top shape for riding are alcohol, drugs and fatigue. Each affects the entire decision-making process of SEE.

Alcohol

Drinking and riding can be fatal. In the USA, the Consumer Product Safety Commission studies show that thirty percent (30%) of all ATV riders killed in ATV accidents had been drinking. Fourteen percent (14%) of all reported accidents with injuries indicated alcohol consumption by the operator. As you can see, ALCOHOL AND ATVS DO NOT MIX.

Losing Control

Alcohol sneaks up on you. Unlike other beverages and foods, alcohol does not have to be digested. Within minutes, it is absorbed into your bloodstream and passed to your brain. It quickly causes a slowdown of your physical and mental reactions. Though you may perform more and more poorly, the alcohol makes you feel as if you are riding better and better. In fact, small quantities of alcohol impair your ability to:

- Ride and scan the trail or riding area for multiple hazards.
- Perceive moving objects.
- React quickly and properly.
- Coordinate eye, hand, and foot movements.
- Maintain balance while manoeuvring.
- Make good decisions.
- See clearly at night.
- Stay within capabilities.

A large number of all fatal injury ATV accidents are associated with alcohol use. In addition to the risk of injury and the resulting medical bills, repairs to the ATV are expensive. In all states you can get prosecuted for "riding under the influence", which can lead to stiff fines and lawyer fees, not to mention possible jail term. The only safe way is not to drink at all.

Other Drugs

Almost any drug puts an ATV rider at risk. Many over-the-counter prescription and illegal drugs have side effects like alcohol, which affect the skills you need to ride safely. Tranquillisers and barbiturates, which are depressants, act like alcohol within your bloodstream. Even cold tablets and allergy pills can make you feel weak, dizzy and drowsy. They may also affect your vision, coordination and judgement.

Marijuana decreases your ability to see at night and recover from headlight glare. Marijuana users cannot react as quickly as usual nor operate the ATV. Amphetamines or cocaine, while they may increase your attentiveness temporarily, bring on extreme fatigue once they wear off. Furthermore, they produce a mild euphoria, which often causes riders to take foolish risks. Never consume drugs before or while operating an ATV.

Fatigue

Riding an ATV is more tiring than driving a car. When you plan a long trip, be mindful that you will tire much sooner than you would in a car. Remember that fatigue can affect your control of the ATV.

Here are some things you can do to keep from getting too tired:

- Protect yourself from the elements. Wind, cold, rain and heat make you tire more quickly. Dress appropriately for the conditions.
- Limit your distance and riding time until you know your limits.
- Take frequent rest breaks. Stop and get off the ATV. No one should go more than one hour without pulling over, stopping, getting off the ATV and walking around.
- Eat food high in carbohydrates to keep up your fitness and concentration.
- Drinking plenty of water during the ride will also help your endurance and concentration.

Loading and Unloading and Transport of ATV

An ATV can be loaded on or off a vehicle safely providing the proper technique is used. Failure to do this can result in serious injury or death. The most suitable vehicle for transporting your ATV are:

- Trailer - Box, Tilt, bike or car trailer.
- Utility - Tray or flatbed
- Truck

When loading the ATV on to another vehicle please keep the following points in mind.

- Remove any loads from the ATV.
- Check that the ATV is in first gear low range.
- If using ramps make sure they are secured to the back of the vehicle or trailer.
- Ensure that the wheels are centred over ramps.
- Do not exceed the ramps specified carrying capacity.
- Make sure the vehicle tray is clear of any obstacles.
- Check that the vehicle being loaded is in gear with the engine off and park brake on.
- Use 4WD if fitted

Suitability of Loading and Unloading Sites

When loading or unloading your ATV it is essential that you choose a suitable loading and unloading site to ensure maximum safety.

Securing Your ATV

Once you have successfully loaded your ATV it must be secured correctly to the transport vehicle. Keep the following points in mind.

- Remove any load from the ATV.
- Make sure the the ATV is centred on the vehicle to ensure correct weight distribution.
- Use only approved straps and harnesses to secure the ATV.
- Ensure that all straps are in good condition and working order.
- Make sure the ATV is secured at both the front and rear of the vehicle.
- Secure straps to approved parts of the transport vehicle.
- Make sure all other objects are secure to ensure that the ATV is not damaged by shifting loads.
- Mount chain, ropes or tie downs to strong fixture points on your ATV and transport vehicle.

Chapter 8 - Quiz

1. “Reading the terrain” means to observe and understand the features and characteristics of the land. True ☐ False ☐

2. The best “lines” to pick are those that include obstacles and uneven terrain. True ☐ False ☐

3. ATV riders should consider the consequences of their choices such as at what speed to travel and what path to take. True ☐ False ☐

4. An ATV can easily travel through slippery mud and deep water. True ☐ False ☐

5. Soft snow is more easily negotiated than firm snow. True ☐ False ☐

6. Ice of any thickness will support your weight as well as the ATV’s. True ☐ False ☐

7. Riding on sand or on sand dune terrain requires special considerations. True ☐ False ☐

8. ATV riders should make themselves visible to other riders. True ☐ False ☐

9. A danger of crossing the road is that driver’s in traffic fail to see ATVs. True ☐ False ☐

10. The effects of alcohol create a negative influence on each step of the SEE process. True ☐ False ☐

Riding Over Obstacles

Obstacles should be avoided when possible. Smaller obstacles may be crossed if proper judgement and skills are utilised. Remember some obstacles are too large and should be completely avoided, even if it means turning around and taking a completely different path. Attempting to cross an obstacle improperly could cause a loss of control or result in your ATV overturning.

When crossing obstacles, follow the procedures listed in your owner's manual for your model ATV. Keep your knees and elbows flexible. Use your legs and arms as shock absorbers to cross obstacles more comfortably. Keep your elbows bent out slightly and away from your body to retain a flexible riding posture for uneven terrain.

Mounds and ruts both act as obstacles. Be sure to stand on the footrests for each. If only the wheel(s) on one side goes over the obstacle (a single-track obstacle), be prepared to shift your weight toward the obstacle and maintain balance as the ATV moves to one side. If there is excessive jarring from impact, bend your knees and arms more.

Keep in mind the following tips when crossing obstacles:

- Approach obstacle as close to 90 degrees as possible, while standing on the footrests.
- Adjust approach speed prior to the obstacle without losing momentum.
- Hold handgrips firmly, with knees and elbows slightly bent and body weight slightly back as the front wheels rise up and over the obstacle.
- As rear wheels ride over the obstacle move your body weight forward to centre yourself on the ATV.

For two-track obstacles:

- Concentrate weight on footrests, not on handlebars.
- As the front wheels contact the obstacle apply a small amount of throttle.
- Lean forward and release the throttle as the front wheels clear the obstacle.

For single track (offset) obstacles:

- Use momentum to cross obstacles.
- Do not apply throttle.
- Do not pull up on handlebars or attempt to loft the front wheels.

Chapter 9 - Quiz

1. Obstacles should be avoided if possible. True ☐ False ☐
2. The larger an obstacle a rider can cross, the better that rider is. True ☐ False ☐
3. The best way to cross an obstacle is to keep your knees and elbows locked. True ☐ False ☐
4. The SEE strategy can be applied in avoiding or crossing obstacles. True ☐ False ☐
5. Mounds and ruts in the terrain are treated similarly to obstacles. True ☐ False ☐
6. The faster an obstacle is crossed, the safer the manoeuvre is. True ☐ False ☐
7. Weight shift is toward the obstacle when crossing a single-track obstacle. True ☐ False ☐
8. Too much throttle could cause an accident when crossing an obstacle. True ☐ False ☐
9. It is best to approach an obstacle as close to 90 degrees as possible. True ☐ False ☐
10. You should check your owner's manual for the correct procedure for crossing obstacles. True ☐ False ☐

When riding just about anywhere, you will encounter some type of hills. An ATV can overturn more easily on extremely steep hills than on level surfaces or small hills. Being prepared and knowing what to do will help you on your journey. Always be sure to check your parking brake before riding in hilly areas.

Going Up A Hill

Remember:
- Some hills are too steep for your abilities. Use your common sense. If the hill looks too steep, it probably is.
- Some hills are just too steep for your ATV regardless of your abilities.
- Never ride past the limit of your visibility - if you cannot see what is on or over the crest of a hill, slow down until you have a clear view.
- The key to being a good hill rider is to keep your weight uphill at all times.

Climbing hills improperly could cause loss of control or cause the ATV to overturn. Always follow the proper procedures for your ATV contained in the owner's manual. When approaching an uphill climb you should:

- Keep your feet firmly on the footrests.
- Shift the ATV into a lower gear and speed up BEFORE climbing the hill so you can maintain momentum.
- When approaching the uphill climb, move way up on the seat and lean forward, or stand and position you torso over the front wheels.
- As you are climbing, you may need to shift to a lower gear to prevent lugging the engine or stalling. To shift into a lower gear on a hill remember:
  - Keep your body weight forward as you prepare to shift gears. For steeper hills, lean forward as much as possible.
  - Shift quickly while momentarily releasing the throttle: this will help keep the front wheels from lifting.

If you do not have enough power to reach the top of the hill, but still have forward momentum and enough room to turn around safely:

- Keep your weight uphill.
- Make a U-turn before you lose speed.
- Proceed downhill in a lower gear, keeping your weight to the uphill side.

If you are riding uphill and lose all forward momentum:

- Keep your weight up hill, and apply the brakes and come to a stop. Never allow the ATV to roll backward.
- Apply the parking brake while keeping your weight uphill.
- Dismount on the uphill side or to a side if pointed straight uphill, and follow the procedure described in your owner's manual.

Do not attempt to ride backward down a hill. Should you begin rolling backward, do not apply the rear brake abruptly. Using the rear brake only or abruptly could cause the ATV to roll over backward. If you begin rolling backward:

- Keep your weight uphill, and apply the front brake. If your ATV does not have a front brake, follow the procedure described in your owner's manual.
- When you are fully stopped. Apply the rear brake as well. Apply the parking brake, dismount on the uphill side or to a side if pointed straight uphill, and follow the procedure described in your owner's manual.
- If the ATV continues to roll backward, dismount to the uphill side immediately.

Getting to the Bottom

Always check the terrain carefully before you start down any hill. Choose a path which is as straight downhill as possible with a minimum of obstacles. Shift your weight to the rear and use a low gear. Follow the procedures described in you owner's manual for special braking techniques for descending.

When going downhill:
- Shift your weight to the rear (uphill).
- Keep speed low.
- Use gradual braking.
- Use a lower gear.
- Look ahead.

Traversing

When you go across a slope rather than directly up or down, it is called traversing. Sometimes when a hill is steep it is necessary to climb it or descend it by traversing.

Traversing a slope is tricky. Avoid traversing slopes with excessively slippery, rough or loose surfaces.

Riding On Hills

Here are some basic guidelines for traversing:

- Keep both feet firmly on the footrests.
- Lean your upper body uphill.
- When riding on soft terrain, you may need to gently turn your front wheel(s) uphill to keep the ATV on a straight line across the hill.
- If your ATV begins to tip, turn the front wheels downhill if the terrain allows. If the terrain does not permit, dismount on the uphill side immediately.
- Avoid making sudden throttle changes.

Chapter 10 - Quiz

1. You should check your parking brake before riding on hills. True ☐ False ☐
2. No hill is too steep for an ATV. True ☐ False ☐
3. Use a high gear to go up and down hills. True ☐ False ☐
4. When descending a hill, you should shift your weight to the rear. True ☐ False ☐
5. If a hill is bumpy with ruts, you should stand on the footrests with your knees and arms slightly bent. True ☐ False ☐
6. Hills with slippery surfaces or loose terrain should be avoided. True ☐ False ☐
7. Making sudden throttle adjustments when traversing a hill can be dangerous. True ☐ False ☐
8. If it becomes necessary to stop on a hill, dismount on the downhill side. True ☐ False ☐
9. To find out how to turn around on a hill if you lose momentum, you should check you owner's manual. True ☐ False ☐
10. Steeper hills require more weight shift than do slight inclines. True ☐ False ☐

You should know safe riding practices and be aware of the environmental concerns shared by responsible riders. Being prepared and knowing how to survive is your best safeguard in case of an emergency like a breakdown or sudden storm.

Plan Ahead

Good planning, following the recommended maintenance schedule of your ATV, travelling in the company of others, and practicing safe riding habits should eliminate most emergencies.

If you decide to ride in areas where a breakdown could threaten your survival, you should prepare yourself by learning survival techniques. In many states survival information is available through state departments or agencies involved in outdoor recreation. Use these and other sources to gather survival information appropriate to the area you plan to ride.

Before you leave:
- Prepare and secure emergency supplies, tools, first aid kit, and any other items necessary for your ride.
- Let someone know your route and when you should return.
- Take a two way radio and emergency beacon.

If you are stranded and you determine help is too far away to walk:
- Use good judgement and common sense. When facing an emergency, remain calm - panic is your worst enemy.
- If you need a fire, select a protected area away from the ATVs and any overhanging branches containing dry leaves. Start your fire using small dry sticks and branches, gradually adding larger pieces of wood as required.
- Before leaving your emergency shelter, make sure all ashes are smothered. One hot ash from your fire could destroy an entire riding area. If you have to spend the night, collect enough wood before it gets dark.
- Whenever you are both stranded and injured, attend to injuries first, then sit down and think out solutions and possibilities.
- Do not travel on foot in strange areas after dark. Conserve all the energy you can because it will help keep you warm.

Survival Kit

A survival kit is an absolute necessity when planning a long ride on your ATV. Whether with a group or just a friend, a survival kit should be included with your supplies on each ride. Prepare your kit according to the local conditions. It should easily fit into a can or other small, waterproof container, to store under the seat, in a bum bag or backpack. Just like the emergency food supply and tool kit, this survival kit applies to all terrains, from the woods to the desert.

Whenever you plan an extended ride or you are going farther than you can walk back in a reasonably short period of time, you should carry at least the following in your bum bag/backpack:

- Trail food
- Water purification tablets
- An area map
- A good, shock-resistant compass
- Lighter or waterproof matches
- Small signal mirror
- Emergency space blanket
- Compact first aid kit
- 15 metres of sturdy rope
- 2 metres of rolled duct tape
- Small flashlight
- Pencil/pen and paper
- Hand axe/brush cutter
- Signal flares
- Two way radio or Satellite phone
- Emergency Beacon
- And always, without exception, CARRY WATER.

Local camping, backpacking or military surplus stores are good sources for quality, lightweight products that are well suited to the rigors of trail riding.

First Aid

ATV accidents can cause bodily injury as well as equipment damage. The most hazardous situation occurs when a person is injured and alone, kilometres from help. Any injury can be serious if handled carelessly. You may have to care for your own injuries and someone else's trauma when you least expect it.

A first-aid kit is easy to make and should contain at least the following.

Six bandaids, two 50mm crepe bandages, four 100mm crepe bandages, four triangular bandages, one roll of 50mm gauze, one roll of 25mm gauze, and one roll of 25mm adhesive tape.

Select a small waterproof container to store the above items on your ATV or in your backpack.

Never remove a helmet from an injured rider unless necessary. Severe injury could result if done improperly.

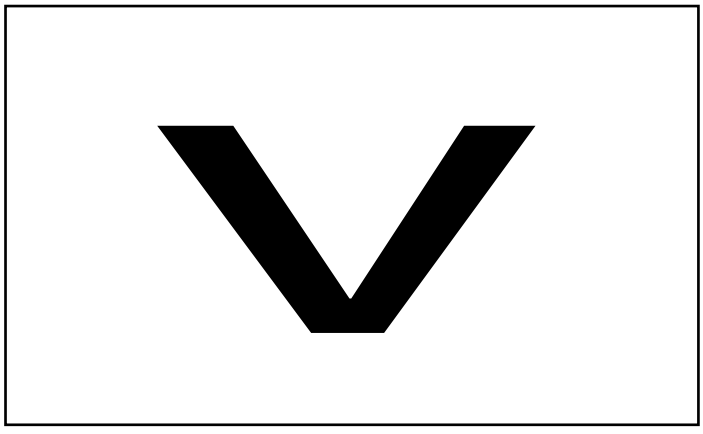
In case of an emergency, be calm, firm and reassuring to the injured person. Do as much as you can for them and, if possible, send others for help.

For your own benefit and that of your friends, you should learn basic first aid.

Ground to Air Rescue Signals

If you find yourself in a position where you have to communicate with a plane, use these signals. The markings should be at least 6 metres long and 1 metre wide so they can be easily read from the air. The markings can be stamped in the snow, or logs, rocks or branches positioned to form signals.

Below: Universal ground to air distress signal



Trail Signs

When riding your ATV you may encounter different types of trail signs. The signs are designed to help trail riders by supplying needed information about the area. Standardised trail signs are being developed by Tread Lightly as shown below. Until they are posted, it is best to follow the off-highway vehicle signs where applicable and lawful. Below are some of the signs used by Tread Lightly in Australia

Laws and Regulations

Laws provide an understanding between ATV riders and enforcement officers concerning the proper way to act while riding off road. These laws help protect people, property and your sport of ATV riding.

You can encourage other ATV operators to follow local and state laws by practicing them yourself. In this way ATV riders can set a good, positive example and, to some extent, police themselves on the trails.

Your ATV is an OFF-ROAD VEHICLE and is not designed for street or highway use. Many states require that you register your ATV through the Road Transport Authority or other licensing body. ATVs used for agricultural or utility purposes may be subject to different provisions than recreational vehicles.

Above all, check where you can ride your ATV. Check when buying your ATV from your dealer. He can advise you as to where you can ride or direct you to the correct sources of information and can often help you with registration if available. Fines and/or penalties for riding an unregistered ATV can be expensive, and you take the risk of having your ATV impounded.

Some states use the off-road registration fees for ATV trails and facilities for road use of ATV's around farm areas. By paying the registration fee, you are helping to buy more land or maintain the off-road areas in your state. Each state's registration requirements vary. Before planning an out-of-state ride, learn that area's laws. Contact your local Road Transport Authority office.

TREAD Lightly

Being a responsible ATV rider means not only protecting yourself from potential hazards, but protecting the environment where you ride as well. It is your responsibility to avoid accidents by riding within your skills at safe speeds and by not performing unsafe manoeuvres. It is just as important to do all you can to preserve the environment when you ride and to be aware of the damage to the environment if you ride irresponsibility.

The best way to protect the environment is to stay on established trails. Using marked trails limits any potential damage to the recreational area.

Enjoying nature is a big part of ATV riding. Riding off road brings you close to sights and sounds you would not experience from the highway or paved road. Protect your right to enjoy nature by riding responsibly and protecting the environment at all times.

"TREAD Lightly" refers to an education and information program to reduce vehicle-caused damage to wild lands. Follow these guidelines to help safeguard the environment for the enjoyment of all by:

- **T**ravelling only where ATV's are permitted.
- **R**especting the rights of hikers, campers and others to enjoy their activities undisturbed.
- **E**ducating yourself by obtaining travel maps and regulations from public agencies, complying with signs and barriers, and asking owner's permission to cross private property.
- **A**voiding streams, lakeshores, meadows muddy roads and trails, steep hillsides, wildlife and livestock.
- **D**riving (riding) responsibly to protect the environment and preserve opportunities to enjoy your vehicle on wild lands.

You and the Rest of the World

There is one fundamental factor that controls your ATV riding - access to land. Developing and maintaining riding opportunities includes getting along with private landowners, public land managers and people you meet on the trails.

Mostly, it takes common courtesy and consideration. Here are a few hints for getting along with others and keeping your riding areas open:

- Know who owns the land you are using. Get permission to use it if needed.
- Stay on marked trails if they are provided.
- Keep your ATV quiet. Do not make your exhaust system noisy - there is nothing that people hate more than a loud off-road vehicle. Keep the muffler well packed.
- Obey closure signs: the land is posted for a reason.
- Always leave gates and fences as you found them.
- Leave the area as clean or cleaner than you found it. Pick up rubbish that may be lying about.
- Be courteous when you meet others on the trails. Pull off and give right of way to horseback riders or hikers. In fact, it is best to shut off your engine when you meet horseback riders; a panicked horse is a danger to you and its rider.
- Remember to remove your helmet when talking to a landowner or someone you meet on the trail. Be friendly and honest with them and keep your helmet visible so it can make a good impression.

Finding Places to Ride

How do you find good places to ride?

Start by asking your ATV dealer. Where do other customers ride? Who owns the land? What are the regulations for using the land? ATV clubs may also provide a way of working with others to find good riding areas.

If you are looking on your own, topographic maps can be a good way to find open land with trails. Find out who owns the land and whether they mind you using it. You can develop a network of good riding areas this way.

Some sources for finding places to ride are:

- Your ATV dealer
- ATV clubs or associations
- State maps (topographical and feature)
- Motorcycling Australia
- National Parks and Wildlife
- 'Tread Lightly' contact in your area

Chapter 11 - Quiz

1. Carrying a map and compass is not a good riding practice. True ☐ False ☐
2. Good planning can help eliminate emergencies. True ☐ False ☐
3. Planning ahead includes letting someone know your route and when you should return. True ☐ False ☐
4. You should always carry some first aid supplies. True ☐ False ☐
5. You should always remove the helmet of an injured rider. True ☐ False ☐
6. In an emergency, “panic” is your best friend. True ☐ False ☐
7. Part of being a responsible rider is taking basic first aid training. True ☐ False ☐
8. “TREAD Lightly” means only riding small ATVs. True ☐ False ☐
9. A responsible ATV rider protects the environment at all times. True ☐ False ☐
10. The basic factor that controls your ATV riding is access to land. True ☐ False ☐

In addition to recreation use, ATVs serve agriculture, business, commercial industry, and government and law enforcement agencies with in-the-job transportation as well as off-duty recreation transportation. ATVs are fun and useful machines. By learning to operate your ATV properly and consistently practicing safe riding techniques, you can look forward to years of rewarding enjoyment of the sport.

Remember to always follow the safety recommendations provided by the ATV manufacturers and your riding will not only be safer, but more fun!

Useful Contacts

Use the space below to list useful contact numbers, email & web addresses.

Government and Industry Accredited Training

Stephen Gall's ATV Safety Institute provides national training to improve the safety of ATV riders through practical training for the sports, rural, government and private industry markets. On successful completion of the ATV rider course, students can receive a nationally recognised **'Statement of Attainment'** to cover industry **WorkSafe** requirements. To become a more skilled ATV rider, contact Stephen Galls ATV Safety Institute on 0755 933340 or email sg_atvsi@bigpond.com.

This manual is also available on the Yamaha website: **www.yamaha-motor.com.au**

Quiz Answers

Chapter 1
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Chapter 2
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Chapter 3
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Chapter 4
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Chapter 5
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Chapter 6
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Chapter 7
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Chapter 8
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Chapter 9
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Chapter 10
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Chapter 11
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- Many people including children, have died in accidents associated with ATV's.
- Collated by Farm Safe Australia, an Australian Government backed organisation, there were 14 deaths related to ATV operation on Australian farms during 2002.
- Many people have become severely paralysed or suffered severe internal injuries as a result of accidents associated with ATV's
- Every month many people are treated in hospital emergency rooms for injuries received while riding an ATV.

You should be aware that AN ATV IS NOT A TOY AND CAN BE HAZARDOUS TO OPERATE. An ATV handles differently from other vehicles, including motorcycles and cars. A collision or rollover can occur quickly, even during routing manoeuvres such as turning and driving on hills and over obstacles, if you fail to take proper precautions.

TO AVOID DEATH OR SEVERE PERSONAL INJURY

- ALWAYS READ THE OWNERS MANUAL CAREFULLY AND FOLLOW THE OPERATING PROCEDURES DESCRIBED. PAY SPECIAL ATTENTION TO THE WARNINGS CONTAINED IN THE MANUAL AND ON ALL LABELS.
- NEVER OPERATE AN ATV WITHOUT PROPER INSTRUCTION. IT IS ADVISABLE TO COMPLETE AN ACCREDITTED ATV TRAINING COURSE.
- ALWAYS FOLLOW THESE AGE RECOMMENDATIONS:

  - A CHILD UNDER 12 YEARS OLD SHOULD NEVER OPERATE AN ATV WITH AN ENGINE SIZE 70CC OR GREATER.

  - A CHILD UNDER 16 YEARS OLD SHOULD NEVER OPERATE AN ATV WITH AN ENGINE SIZE GREATER THAN 90CC.

- NEVER ALLOW A CHILD UNDER 16 YEARS OLD TO OPERATE AN ATV WITHOUT ADULT SUPERVISION. CHILDREN NEED TO BE OBSERVED CAREFULLY BECAUSE NOT ALL CHILDREN HAVE THE STRENGTH, SIZE, SKILLS OR JUDGEMENT NEEDED TO OPERATE AN ATV SAFELY.
- NEVER CARRY A PASSENGER ON AN ATV. CARRYING A PASSENGER MAY UPSET THE BALANCE OF THE ATV AND MAY CAUSE IT TO GO OUT OF CONTROL.
- ALWAYS AVOID PAVED SURFACES. ATV'S ARE NOT DESIGNED TO BE USED ON PAVED SURFACES AND PAVEMENT MAY SERIOUSLY AFFECT HANDLING AND CONTROL.
- NEVER OPERATE AN ATV ON A PUBLIC ROAD, EVEN A DIRT OR GRAVEL ONE, BECAUSE YOU MAY NOT BE ABLE TO AVOID COLLIDING WITH OTHER VEHICLES. ALSO, OPERATING AN ATV ON A PUBLIC ROAD MAY BE AGAINST THE LAW.
- NEVER OPERATE AN ATV WITHOUT AN APPROVED MOTORCYCLE HELMET, EYE PROTECTION, BOOTS, GLOVES, LONG PANTS AND LONG SLEEVE SHIRT OR JACKET.
- NEVER CONSUME ALCOHOL OR DRUGS BEFORE OR WHILE OPERATING AN ATV.
- NEVER OPERATE AN ATV AT EXCESSIVE SPEEDS. GO AT A SPEED WHICH IS PROPER FOR THE TERRAIN, VISIBILITY CONDITIONS, AND YOUR EXPERIENCE.
- NEVER ATTEMPT TO DO WHEELIES, JUMPS OR OTHER STUNTS.
- ALWAYS BE CAREFUL WHEN OPERATING AN ATV, ESPECIALLY WHEN APPROACHING HILLS, TURNS AND OBSTACLES AND WHEN OPERATING ON UNFAMILIAR OR ROUGH TERRAIN.
- NEVER LEND YOUR ATV TO ANYONE WHO HAS NOT TAKEN A TRAINING COURSE OR HAS NO PREVIOUS ATV RIDING EXPERIENCE.